

Claims

- [1] A scooter with variable wheel configuration between a two-wheeled vehicle and a three-wheeled vehicle, the scooter comprising:
a frame for supporting and carrying a rider or a passenger and containing a battery and a controller;
a steering assembly mounted on the front of the frame to pivot in left and right directions for steering, the steering assembly having a lower portion to which a front wheel is rotatably mounted and an upper portion provided with a handgrip for a rider to steer, a brake lever, an actuator control lever, and a throttle grip;
a mount formed at a rear end of the frame in one-piece, the mount having a first mounting portion on one end and a second mounting portion on the other end;
a first driving unit detachably mounted on the first mounting portion of the mount for a two-wheeled configuration or on the second mounting portion of the mount for a three-wheeled configuration; and
a second driving unit detachably mounted to the first mounting portion and connected to the first driving unit for the three-wheeled configuration.
- [2] The scooter of claim 1, wherein each of the first and the second mounting portions includes a fastener for fastening the first driving unit and or the second driving unit.
- [3] The scooter of claim 2, wherein the fastener is a clamp and each of the first and the second driving units is provided with a notched portion for the clamp.
- [4] The scooter of claim 1, wherein the first driving unit includes:
a base capable of being detachably mounted to one of the first and second mounting portions of the mount;
an actuator installed at the base and being connected to the controller and the battery;
a drive shaft rotatably attached to the base, the drive shaft having a coupling on one end; and
a wheel rotatably connected to the other end of the drive shaft and the actuator.
- [5] The scooter of claim 4, wherein the base includes a bent mounting portion for detachably mounting the first driving unit on one of the first and second mounting portions.
- [6] The scooter of claim 4, wherein the actuator is a reversible motor capable of rotating in both forward and reverse directions.
- [7] The scooter of claim 4, wherein the actuator includes a first sprocket for power output and the wheel is provided at an inside with a second sprocket in one piece, the first and the second sprocket being connected by a chain.

- [8] The scooter of claim 1, wherein the first driving unit is provided with a handle.
- [9] The scooter of claim 1, wherein the second driving unit includes:
a base capable of being detachably mounted to the mount;
an actuator installed at the base;
a transmission connected with the actuator; and
a drive shaft connected to the transmission and rotatably attached to the base, the drive shaft having one end on which a wheel is mounted and the other end connected to the first driving unit.
- [10] The scooter of claim 9, wherein the base includes a bent mounting portion for inserting a lower part of the first mounting portion therein.
- [11] The scooter of claim 9, wherein the actuator is a fossil fuel-powered engine.
- [12] The scooter of claim 9, wherein the actuator includes a first sprocket for power output and the transmission includes a second sprocket, the first and the second sprocket being connected by a chain.
- [13] The scooter of claim 9, wherein the second driving unit is provided with a handle.
- [14] The scooter of claim 4 or claim 9, wherein the second driving unit includes a coupling on the other end of the drive shaft, the coupling of the second driving unit being detachably connected to the coupling of the second driving unit.
- [15] The scooter of claim 1, wherein the mount is provided with a throttle wire connector connected with the throttle grip via a wire, the throttle wire connector being selectively and detachably connected with actuators of the driving units.
- [16] The scooter of claim 1, wherein the mount is provided with a brake wire connector connected with the break lever via a wire and a brake assembly of each of the driving units.
- [17] The scooter of claim 1, wherein the first driving unit comprises an actuator built into a wheel.
- [18] The scooter of claim 1, wherein the front wheel includes a built-in actuator.